pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0007498**
Facility Type	**Industrial**	APS ID	**1075007**
Major / Minor	**Major**	Authorization ID	**1416395**

NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

Applicant and Facility Information

Applicant Name	**Wise Foods, Inc.**	Facility Name	**Wise Foods, Inc.**
Applicant Address	228 Raseley Street	Facility Address	228 Raseley Street
	Berwick, PA 18603-4533		Berwick, PA 18603-4533
Applicant Contact	Richard Wolfe	Facility Contact	Richard Wolfe
Applicant Phone	(570) 759-4203	Facility Phone	(570) 759-4203
Client ID	401	Site ID	254524
SIC Code	2096	Municipality	Berwick Borough
SIC Description	Manufacturing - Potato Chips, Corn Chips and Similar Snacks	County	Columbia
Date Application Received	November 2, 2022	EPA Waived?	No
Date Application Accepted	December 15, 2022	If No, Reason	Major Facility, Significant CB Discharge
Purpose of Application	Renewal of an existing NPDES permit for the discharge of treated industrial waste.		

1.0 Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Approve	Deny	Signatures	Date
X		Derek S. Garner / Project Manager	8/14/2023
X		Nicholas W. Hartranft, P.E. / Environmental Engineer Manager	8/24/2023

2.0 Facility Summary

The Berwick Snack Food Plant manufactures snack foods that include potato and corn-based chips.

The facility's onsite industrial wastewater treatment plant ("IWTP") treats wastewater from potato processing (hydrosieve and starch recovery) and the oil-water separation system. The IWTP is covered under WQM Permit Nos. 1986201 and 1972204. The treatment plant consists of:

- Primary clarification
  - One (1) primary settling basin
- Activated sludge biological treatment
  - Two (2) aeration basins, in parallel
- Secondary clarification
  - Three (3) clarifiers, in parallel
- Sludge thickening
  - One (1) sludge plate press, dewatered solids taken off site for disposal.

The wastewater is ultimately discharged to the Susquehanna River via Outfall 001.

All sanitary waste and process water from the corn-based operations are treated at the Berwick Area Joint Sewer Authority Wastewater Treatment Plant, NPDES Permit No. PA0023248.

See Attachment A for the Facility and Discharge Location Map.

3.0 Discharge, Receiving Waters and Water Supply Information

3.1 Outfall 001

Outfall 001 continuously discharges IWTP effluent 24 hours a day, 7 days a week.

Table 3-1. Outfall 001 Information

Outfall No.	001	Design Flow (MGD)	0.2357
Latitude	41º 2' 42.21"	Longitude	-76º 14' 50.38"
Quad Name	Berwick	Quad Code	1036
Wastewater Description:	IW Process Effluent with ELG		

Receiving Waters	Susquehanna River	Stream Code	6685
NHD Com ID	65639377	RMI	160.13
Drainage Area	10,500	Yield (cfs/mi^2)	0.105
Q_{7-10} Flow (cfs)	1,104	Q_{7-10} Basis	Streamgage No. 01540500
Elevation (ft)	473	Slope (ft/ft)	n/a
Watershed No.	5-D	Chapter 93 Class.	WWF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Impaired		
Cause(s) of Impairment	Mercury, PCBs		
Source(s) of Impairment	Source(s) Unknown		
TMDL Status	Final	Name	Susquehanna River PCB

3.2 Susquehanna River

The specific reach of the Susquehanna River that Outfall 001 is located on is currently impaired by mercury and PCBs, both originating from unknown sources. The outfall is not expected to contribute to the mercury or PCB impairments based on sampling results completed for the application.

The Q7-10 of the Susquehanna River at Wise was calculated by using USGS Stream Gage No. 01540500, located at Danville, PA, as a reference gage. The gage has a drainage area of 11,220 mi^2. and a Q7-10 of 1,180 cfs; resulting in a low-flow yield of 0.105 cfs/mi^2. Applying the low-flow yield to Outfall 001's drainage area of 10,500 mi^2 results in a calculated Q7-10 of 1,104 cfs. A Q7-10 of 1,108 was calculated at downstream node RMI 157.9 for modeling purposes.

See Attachment B for Q7-10 calculations and supporting documentation.

3.3 Downstream Public Water Supply Intake

The nearest downstream water supply intake is the Danville Municipal Authority located in Danville, PA, approximately 22 river miles downstream at RMI 138.06. The discharge is not expected to impact the water intake.

4.0 Compliance History

The facility was most recently inspected by DEP on April 17, 2023. The inspection report recommended that the secondary clarifiers are cleaned and recoated and that general housekeeping needs improvement around the treatment plant.

A review of historic eDMR data dating back to the existing permit's effective date yielded the following effluent violations:

Table 4-1. eDMR Violation Summary

Noncompliance Date	Parameter	Sample Value	Violation Condition	Permit Value	Units	SBC
12/27/2018	CBOD5	373	>	250	mg/L	Daily Maximum
4/27/2020	Total Suspended Solids	500	>	450	mg/L	Daily Maximum
9/25/2020	CBOD5	288	>	250	mg/L	Daily Maximum
11/25/2020	Oil and Grease	22	>	15	mg/L	Average Monthly
11/25/2020	Oil and Grease	69.5	>	20	mg/L	Daily Maximum
12/28/2020	Oil and Grease	34.8	>	20	mg/L	Daily Maximum
8/23/2021	CBOD5	422	>	250	mg/L	Daily Maximum
8/23/2021	CBOD5	787	>	580	lbs/day	Daily Maximum
8/23/2021	Total Suspended Solids	504	>	450	mg/L	Daily Maximum
3/28/2022	Oil and Grease	45	>	20	mg/L	Daily Maximum
5/27/2022	CBOD5	1068	>	580	lbs/day	Daily Maximum
5/27/2022	CBOD5	396	>	250	mg/L	Daily Maximum
4/27/2023	CBOD5	129	>	125	mg/L	Average Monthly
4/27/2023	CBOD5	385	>	250	mg/L	Daily Maximum
4/27/2023	Total Suspended Solids	1250	>	1050	lbs/day	Daily Maximum
4/27/2023	Total Suspended Solids	790	>	450	mg/L	Daily Maximum

Operations Section is aware of the abovementioned violations and has been in contact with the permittee.

There are no open violations associated with the permittee.

5.0 Development of Effluent Limitations

Effluent limits are the most stringent of technology-based effluent limitations ("TBELs"), water quality-based effluent limitations ("WQBELs"), or best professional judgment ("BPJ").

5.1 Technology-based Effluent Limitations

The first step in developing effluent limitations is to recognize and develop applicable TBELs based on the industrial activity that takes place at the facility. TBELs are subject to the development of more stringent WQBELs or BPJ.

ELG Parameters

Outfall 001 discharges treated industrial waste from the IWTP, described in Section 2.0 above. Wise's potato chip process wastewater is covered under 40 CFR Part 407, Subpart H - Canned and Miscellaneous Specialties Subcategory. The effluent limit guidelines ("ELGs") in Subpart H establish best practicable control technology currently available ("BPT") and best conventional pollutant control technology ("BCT") effluent limitations as follows:

Table 5-1. ELG Parameters

Pollutant	Instant. Max.	Maximum Daily	Average Monthly	Annual Average	BPT	BCT
BOD5 (lb/1,000 lb product)		3.46	2.17	1.58	X	X
TSS (lb/1,000 lb product)		6.25	4.49	2.97	X	X
Oil and Grease (mg/l)	20				X	X
pH	Within 6.0 to 9.5				X	X

Since the ELGs for BOD5 and total suspended solids ("TSS") are production-based (lb/1,000 lb), DEP must calculate the appropriate mass limitations. The following methodology was used to calculate the mass limits:

- 40 CFR § 407.81(o) states that the average monthly and daily maximum shall be based on the, "daily average mass of final product produced during the peak thirty consecutive day production period." The renewal application lists production data for years 2017 through 2021. The month with the highest production was August 2019, at 4,529,177 lbs. Accordingly, average monthly and daily maximum mass limits are based off this average.

- 40 CFR § 407.81(n) states that the annual average shall be calculated by, "multiplying the total mass (kkg or 1000 lb) of each final product produced for the entire processing season or calendar year by the applicable annual average limitation." Accordingly, the average annual limits are based off the average annual production over the past five years; 41,358,931 lbs.

The resulting limits for BOD5 and TSS are as follows:

Table 5-2. Calculated ELG Limits

Pollutant	Maximum Daily (lbs/day)	Average Monthly (lbs/day)	Average Annual (lbs/yr)
BOD5	653	410	65,347
TSS	1,179	847	122,836

See Attachment C for ELG calculations.

Chapter 95 Industrial Waste Treatment Standards

In addition to the ELG requirements above, 25 PA Code Chapter 95 establishes industrial waste treatment standards for pH, oil and grease, and dissolved iron as follows:

Table 5-3. Chapter 95 Treatment Standards

Parameter	Limit	SBC	State Regulation
pH	6.0	Minimum	95.2(1)
	9.0	IMAX	95.2(1)
Oil and Grease (mg/l)	15	Average Monthly	95.2(2)
	30	IMAX	95.2(2)
Dissolved Iron (mg/l) [(1)]	7.0	Average Monthly	95.2(4)

(1) Sampling performed for the renewal application indicates a maximum dissolved iron concentration of 0.214 mg/l at Outfall 001. Since there is no reasonable potential to exceed the 7.0 mg/l TBEL, a dissolved iron limitation will not be established in the permit.

5.2 Water Quality-based Effluent Limitations

After developing the TBELs, the next step is to determine if there are more stringent WQBELs that must be applied. An analysis using DEP's WQM 7.0 v1.0b and Toxics Management Spreadsheet v1.4 ("TMS") was performed for the discharges. WQM 7.0 is a multiple source discharge model that is used to determine NPDES effluent limits for ammonia-nitrogen, CBOD5, and dissolved oxygen, if applicable. TMS is a single discharge model that is used to determine NPDES effluent limitations for toxics, if applicable. A thermal discharge analysis was not completed since there is no thermal loading added to the discharges.

Background data of Susquehanna River was taken from WQN0302, a gage located upstream of Wise that is part of DEP's water quality network. The background data was entered in the appropriate models to better characterize the water quality of the acute and chronic mixing zones.

WQM 7.0

WQM 7.0 was used to determine if ammonia-nitrogen, CBOD5, or dissolved oxygen WQBELs are appropriate for the discharge at Outfall 001. A reach was created in WQM 7.0 from Outfall 001 to the mouth of Briar Creek (RMI 157.92) to accurately model in-stream conditions downstream of the discharge. The model indicates that there is minimal impact on the dissolved oxygen levels in the Susquehanna River; therefore, the reach size and number of reaches utilized is appropriate.

Table 5-4. WQM 7.0 Outfall 001 Modeling Results

Parameter	Effluent Limit (mg/l)		
	Average Monthly	Daily Maximum	Minimum
CBOD5 (1)	125	--	--
Ammonia-nitrogen	39	78	--
Dissolved Oxygen	--	--	3

(1) The TBELs are expressed in BOD5 rather than CBOD5. The WQM model is primarily geared towards sewage discharges which typically have limits expressed in CBOD5. However, sampling indicates minimal amounts of ammonia-n are present in the effluent, meaning the nitrogenous demand in the effluent is negligible. Therefore, establishing CBOD5 limits in place of BOD5 limits should not introduce unwarranted conservatism. This approach is consistent with the previous renewal of the permit.

The input concentrations for CBOD5 and ammonia-nitrogen are the average monthly limits in the existing permit. A dissolved oxygen concentration of 3 mg/l was used as a baseline value to determine if dissolved oxygen limits are necessary. The deoxygenation rate (Kc') was changed to reflect the high discharge concentration of BOD5. The Kc' was calculated by multiplying the BOD5 discharge concentration by 0.06, as recommended in the *Technical Reference Guide (TRG) WQM 7.0 for Windows Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen Version 1.0 (385-2000-007, 6/26/04)*.

The model output indicates that the existing requirements for CBOD5, ammonia-nitrogen, and dissolved oxygen are protective of the Susquehanna River.

Toxics Management Spreadsheet

The TMS was used to determine if WQBELs are appropriate for toxics found in the discharge. Most of the input data was taken from the renewal application's pollutant group sampling. However, for total copper and total iron, large enough data sets for were available from sampling required by the existing permit to calculate average monthly concentrations and daily coefficients of variation using the TOXCONC spreadsheet. The TOXCONC output was used as input values for TMS.

The TMS compares the abovementioned input data to the most stringent criterion and recommends either taking no action, establishing monitoring requirements, or establishing effluent limits. The TMS does not recommend any monitoring requirements or effluent limits. Accordingly, existing requirements for total copper and total iron have been removed from the permit.

See Attachment D for model input/output data and supporting documentation.

5.3 Best Professional Judgment (BPJ) Limitations

Total Suspended Solids

Existing TSS limits were developed by applying the percent reduction between technology-based BOD5 limits and the more stringent water quality-based CBOD5 limits to the technology-based TSS limits. DEP believes the existing TSS limits are still appropriate and should remain in the permit.

Total Dissolved Solids

In 2013, the permit was renewed and established TDS monitoring requirements. The permit was subsequently renewed again in 2018. As part of the 2018 renewal, the TDS results taken during the permit's previous five-year term were reviewed. The review indicated that TDS concentrations dd not approach the § 95.10 "trigger' concentration of 2,000 mg/l and since a baseline characterization of the wastewater has been developed, monitoring may be removed from the permit. TDS requirements do not need to be reevaluated unless the permittee proposes an expansion or change in waste stream.

Monitoring Requirements

Monitoring requirements remain unchanged from the existing permit.

5.4 Chesapeake Bay

The Phase 3 Watershed Implementation Plan ("WIP") Wastewater Supplement, Table 7, identifies Wise as one of the 23 significant industrial wastewater facilities in Pennsylvania, and establishes final cap loads for Total Nitrogen and Total Phosphorus of 19,957 lbs/yr and 898 lbs/yr, respectively.

5.5 Anti-Backsliding

Requirements for total copper and total iron have been removed from the permit based on sampling data that was not available at the time of the previous renewal. This approach is consistent with exceptions to anti-backsliding at 40 CFR § 122.44(l)(2)(i)(B)(1)

6.0 Existing Effluent Limitations and Monitoring Requirements

The existing effluent limitations and monitoring requirements are as follows:

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	290	580	XXX	125.0	250.0	310	5/week	24-Hr Composite
CBOD5 (Total Load, lbs)	XXX	75781 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Suspended Solids	600	1050	XXX	258.0	450.0	645	5/week	24-Hr Composite
Total Suspended Solids (Total Load, lbs)	XXX	142450 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Oil and Grease	Report	Report	XXX	15.0	20.0	XXX	2/week	Grab
Ammonia-Nitrogen	90	175	XXX	39.0	75.0	95	2/week	24-Hr Composite
Copper, Total	XXX	Report	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Iron, Total	5.90	11.8	XXX	2.53	5.06	6.32	1/week	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): Outfall 001

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Net Total Nitrogen	Report	19957	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	898	XXX	XXX	XXX	XXX	1/month	Calculation

7.0 Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	245	490	XXX	125.0	250.0	310	5/week	24-Hr Composite
CBOD5 (Total Load, lbs) (lbs)	XXX	75781 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Suspended Solids	500	880	XXX	258.0	450.0	645	5/week	24-Hr Composite
Total Suspended Solids (Total Load, lbs) (lbs)	XXX	142450 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Oil and Grease	Report	Report	XXX	15.0	20.0	XXX	2/week	Grab
Ammonia-Nitrogen	75	145	XXX	39.0	75.0	95	2/week	24-Hr Composite
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite

Compliance Sampling Location: Outfall 001

The limitations and monitoring requirements specified below are proposed for the draft permit, to comply with Pennsylvania's Chesapeake Bay Tributary Strategy.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Net Total Nitrogen	XXX	19957	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	XXX	898	XXX	XXX	XXX	XXX	1/month	Calculation

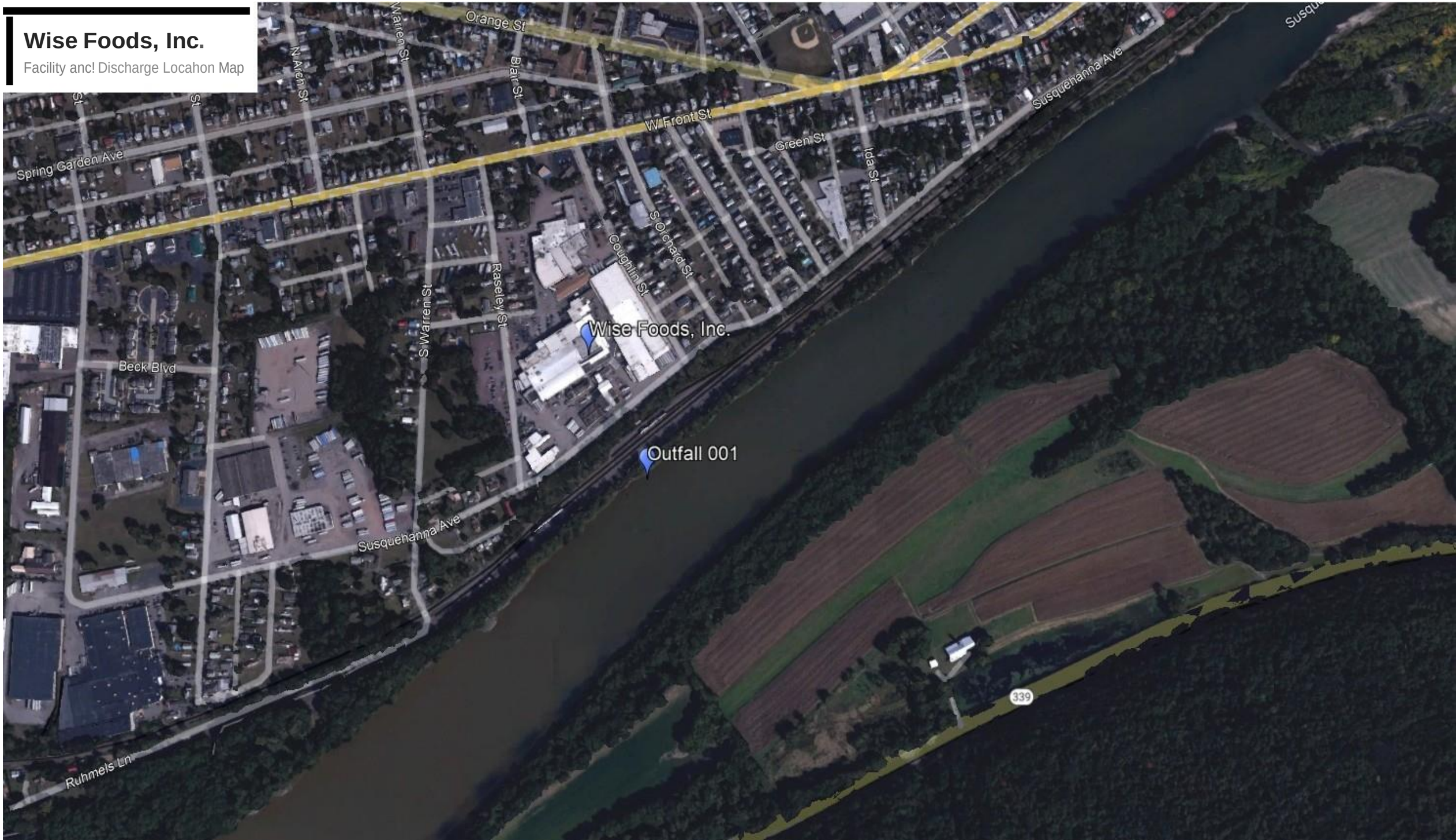
Compliance Sampling Location: Outfall 001

ATTACHMENT A

Facility and Discharge Location Map

Wise Foods, Inc.

Facility anc! Discharge Locahon Map



ATTACHMENT B

Q7-10 Calculations and Supporting Documentation

USGS
science for a changing world

Prepared in cooperation with the Pennsylvania Department of Environmental Protection

Selected Streamflow Statistics for Streamgage Locations in and near Pennsylvania

Open-File Report 2011-1070

U.S. Department of the Interior
U.S. Geological Survey

Table 1. List of U.S. Geological Survey streamgage locations in and near Pennsylvania with updated streamflow statistics.—Continued

[Latitude and Longitude in decimal degrees; mi^2, square miles]

Streamgage number	Streamgage name	Latitude	Longitude	Drainage area (mi^2)	Regulated[1]
01508803	West Branch Tioughnioga River at Homer, N.Y.	42.638	-76.176	71.5	N
01509000	Tioughnioga River at Cortland, N.Y.	42.603	-76.159	292	N
01510000	Otselic River at Cincinnatus, N.Y.	42.541	-75.900	147	N
01512500	Chenango River near Chenango Forks, N.Y.	42.218	-75.848	1,483	N
01515000	Susquehanna River near Waverly, N.Y.	41.985	-76.501	4,773	N
01516350	Tioga River near Mansfield, Pa.	41.797	-77.080	153	N
01516500	Corey Creek near Mainesburg, Pa.	41.791	-77.015	12.2	N
01518000	Tioga River at Tioga, Pa.	41.908	-77.129	282	Y
01518700	Tioga River at Tioga Junction, Pa.	41.953	-77.115	446	Y
01518862	Cowanesque River at Westfield, Pa.	41.923	-77.532	90.6	N
01520000	Cowanesque River near Lawrenceville, Pa.	41.997	-77.140	298	Y
01520500	Tioga River at Lindley, N.Y.	42.029	-77.132	771	Y
01521500	Canisteo River at Arkport, N.Y.	42.396	-77.711	30.6	Y
01523500	Canacadea Creek near Hornell, N.Y.	42.335	-77.683	57.9	Y
01524500	Canisteo River below Canacadea Creek at Hornell, N.Y.	42.314	-77.651	158	Y
01526500	Tioga River near Erwins, N.Y.	42.121	-77.129	1,377	Y
01527000	Cohocton River at Cohocton, N.Y.	42.500	-77.500	52.2	N
01527500	Cohocton River at Avoca, N.Y.	42.398	-77.417	152	N
01528000	Fivemile Creek near Kanona, N.Y.	42.388	-77.358	66.8	N
01529000	Mud Creek near Savona, N.Y.	42.308	-77.197	76.6	Y
01529500	Cohocton River near Campbell, N.Y.	42.253	-77.217	470	N
01529950	Chemung River at Corning, N.Y.	42.146	-77.057	2,006	Y
01530332	Chemung River at Elmira, N.Y.	42.086	-76.801	2,162	Y
01530500	Newtown Creek at Elmira, N.Y.	42.105	-76.798	77.5	Y
01531000	Chemung River at Chemung, N.Y.	42.002	-76.635	2,506	Y
01531500	Susquehanna River at Towanda, Pa.	41.765	-76.441	7,797	Y
01532000	Towanda Creek near Monroeton, Pa.	41.707	-76.485	215	N
01532850	MB Wyalusing Creek near Birchardville, Pa.	41.863	-76.007	5.67	N
01533400	Susquehanna River at Meshoppen, Pa.	41.607	-76.050	8,720	Y
01533500	North Branch Mehoopany Creek near Lovelton, Pa.	41.531	-76.156	35.2	N
01533950	SB Tunkhannock Creek near Montdale, Pa.	41.575	-75.642	12.6	N
01534000	Tunkhannock Creek near Tunkhannock, Pa.	41.558	-75.895	383	N
01534300	Lackawanna River near Forest City, Pa.	41.680	-75.472	38.8	Y
01534500	Lackawanna River at Archbald, Pa.	41.505	-75.542	108	Y
01536000	Lackawanna River at Old Forge, Pa.	41.359	-75.744	332	Y
01536500	Susquehanna River at Wilkes-Barre, Pa.	41.251	-75.881	9,960	Y
01537000	Toby Creek at Luzerne, Pa.	41.281	-75.896	32.4	Y
01537500	Solomon Creek at Wilkes-Barre, Pa.	41.228	-75.904	15.7	N
01538000	Wapwallopen Creek near Wapwallopen, Pa.	41.059	-76.094	43.8	N
01539000	Fishing Creek near Bloomsburg, Pa.	41.078	-76.431	274	N
01539500	Little Fishing Creek at Eyers Grove, Pa.	41.080	-76.511	56.5	N
01540200	Trexler Run near Ringtown, Pa.	40.853	-76.280	1.77	N
01540500	Susquehanna River at Danville, Pa.	40.958	-76.619	11,220	Y
01541000	West Branch Susquehanna River at Bower, Pa.	40.897	-78.677	315	N
01541200	West Branch Susquehanna River near Curwensville, Pa.	40.961	-78.519	367	Y

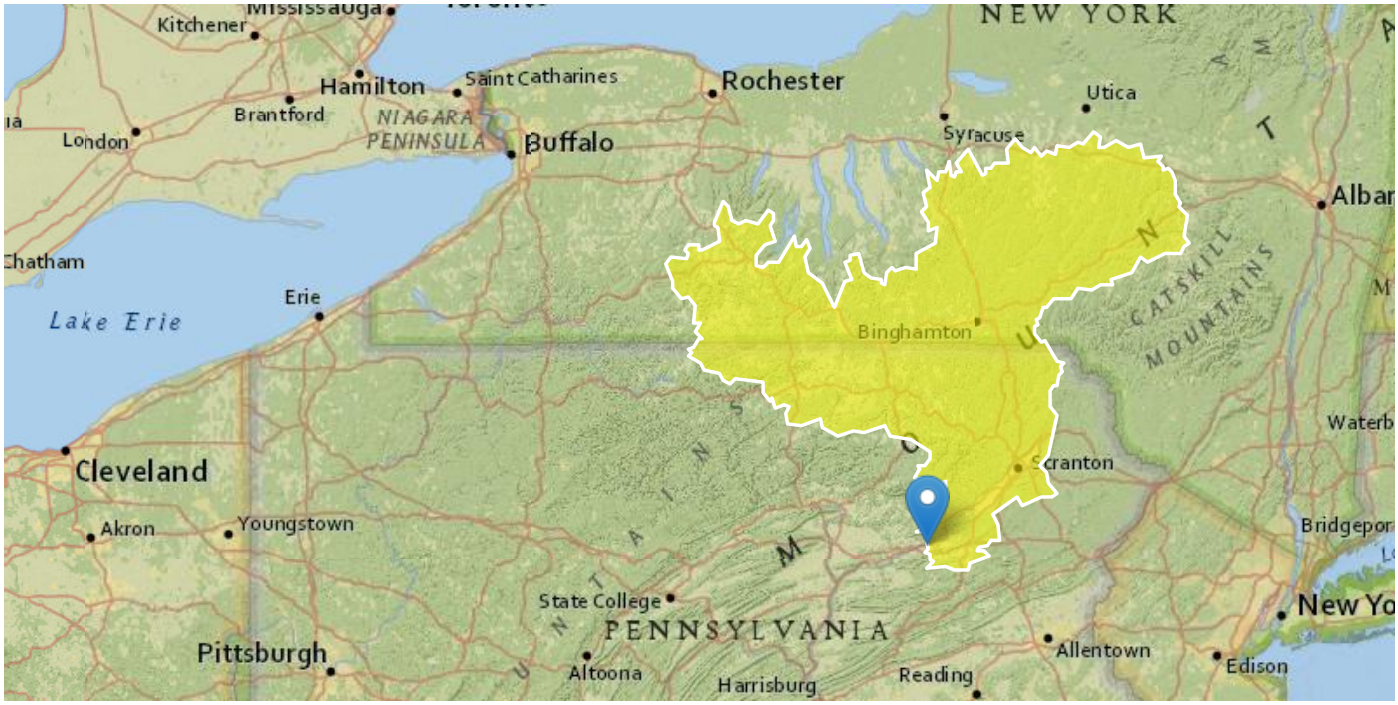
DFLOW Results

All available data from Apr 1, 1991 through Mar 31, 2021 are included in analysis.

Gage	Period	Days in Record	Zero/Missing	1B3	Percentile	Excur per 3 yr	1Q10	Percentile	Excur per 3 yr	1Qy Type	xQy	Percentile	Harmonic	Percentile
01540500 - Susquehanna River at Danville, PA	1990/04/01 - 2020/04/01	10,958	0/0	1.09E+03	0.26%	1	1.14E+03	0.44%	1.3	1Q11	9.69E+02	0.11%	6.65E+03	31.15%
Gage	**Period**	**Days in Record**	**Zero/Missing**	**1B3**	**Percentile**	**Excur per 3 yr**	**7Q10**	**Percentile**	**Excur per 3 yr**	**7Qy Type**	**xQy**	**Percentile**	**Harmonic**	**Percentile**
01540500 - Susquehanna River at Danville, PA	1990/04/01 - 2020/04/01	10,958	0/0	1.09E+03	0.26%	1	1.18E+03	0.48%	1.5	7Q11	1.02E+03	0.25%	6.65E+03	31.15%
Gage	**Period**	**Days in Record**	**Zero/Missing**	**1B3**	**Percentile**	**Excur per 3 yr**	**30Q10**	**Percentile**	**Excur per 3 yr**	**30Qy Type**	**xQy**	**Percentile**	**Harmonic**	**Percentile**
01540500 - Susquehanna River at Danville, PA	1990/04/01 - 2020/04/01	10,958	0/0	1.09E+03	0.26%	1	1.43E+03	1.16%	2.7	30Q18	1.09E+03	0.26%	6.65E+03	31.15%

Wise Foods, Inc.

Region ID: PA
Workspace ID: PA20230801130741721000
Clicked Point (Latitude, Longitude): 41.04525, -76.24706
Time: 2023-08-01 09:08:07 -0400



Drainage area at Outfall 001

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	7.1739	degrees
BSLOPDRAW	Unadjusted basin slope, in degrees	7.3914	degrees
BSLPDRPA20	Unadjusted basin slope, in degrees, from PA v1	7.5496	degrees
CARBON	Percentage of area of carbonate rock	1.1	percent
CENTROXA83	X coordinate of the centroid, in NAD_1983_Albers, meters	152464.6108	meters
CENTROYA83	Basin centroid horizontal (y) location in NAD 1983 Albers	346483.0251	meters
DRN	Drainage quality index from STATSGO	3.8	dimensionless
DRNAREA	Area that drains to a point on a stream	10500	square miles

Parameter Code	Parameter Description	Value	Unit
ELEV	Mean Basin Elevation	1458	feet
ELEVMAX	Maximum basin elevation	2735	feet
FOREST	Percentage of area covered by forest	67.8962	percent
GLACIATED	Percentage of basin area that was historically covered by glaciers	98.7646	percent
IMPNLCD01	Percentage of impervious area determined from NLCD 2001 impervious dataset	1.2355	percent
LC01DEV	Percentage of land-use from NLCD 2001 classes 21-24	6.4013	percent
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	6.3832	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	1.34	percent
LONG_OUT	Longitude of Basin Outlet	-76.247052	degrees
MAXTEMP	Mean annual maximum air temperature over basin area from PRISM 1971-2000 800-m grid	55.9	degrees F
OUTLETXA83	X coordinate of the outlet, in NAD_1983_Albers,meters	147351.3543	meters
OUTLETYA83	Y coordinate of the outlet, in NAD_1983_Albers, meters	228567.0565	meters
PRECIP	Mean Annual Precipitation	38	inches
ROCKDEP	Depth to rock	4.6	feet
STORAGE	Percentage of area of storage (lakes ponds reservoirs wetlands)	4.16	percent
STRDEN	Stream Density -- total length of streams divided by drainage area	1.72	miles per square mile
STRMTOT	total length of all mapped streams (1:24,000-scale) in the basin	18024.84	miles
URBAN	Percentage of basin with urban development	3.1474	percent

Application Version: 4.16.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Low-Flow (Q_{7-10}) Calculation

Facility: **Wise Foods, Inc.**
NPDES Permit No. **PA0007498**

Gage Information

Drainage Area: **11220** mi²
Q_{7-10}: **1180** cfs
LFY: **0.105** cfsm

Outfall Information

Drainage Area: **10500** mi²
Q_{7-10}: **1104** cfs

Downstream Locations

RMI: **157.9**
Drainage Area: **10533** mi²
Q_{7-10}: **1108** cfs

RMI:
Drainage Area: mi²
Q_{7-10}: cfs

RMI:
Drainage Area: mi²
Q_{7-10}: cfs

RMI:
Drainage Area: mi²
Q_{7-10}: cfs

RMI:
Drainage Area: mi²
Q_{7-10}: cfs

RMI:
Drainage Area: mi²
Q_{7-10}: cfs

RMI:
Drainage Area: mi²
Q_{7-10}: cfs

RMI:
Drainage Area: mi²
Q_{7-10}: cfs

ATTACHMENT C

ELG Calculations

Part 407 - Canned and Preserved Fruits and Vegetables Processing Point Source Category
Subpart H -Canned and Miscellaneous Specialties Subcategory

Average Annual Production =	41358931	lbs
Max Monthly Production =	4529177	lbs
Avg Production Days/Month =	24	days
Daily Average Production =	188716	lbs/day

407.82(a)

Commodity (specialties)	BOD5 (lbs/day)				BOD5 (lbs/yr)	
	Maximum Daily	Calculated Limit	Average Monthly	Calculated Limit	Average Annual	Calculated Limit
Potato Chips	3.46	**653**	2.17	**410**	1.58	**65347**

407.82(b)

Commodity (specialties)	TSS (lbs/day)				TSS (lbs/yr)	
	Maximum Daily	Calculated Limit	Average Monthly	Calculated Limit	Average Annual	Calculated Limit
Potato Chips	6.25	**1179**	4.49	**847**	2.97	**122836**

ATTACHMENT D

Model Input/Output Data and Supporting Documentation

Facility: Wise Foods, Inc.
NPDES #: PA0007498
Outfall No.: 001
n (Samples/Month): 4
Reviewer/Permit Engineer: Derek Garner

Parameter Name	Total Copper	Total Iron
Units	mg/L	mg/L
Detection Limit	0.025	0.3
Sample Date	*When entering values below the detection limit, enter "ND" or use the < notation (eg. "<0.05")*	
	0.0145	1.05
	0.0176	0.742
	0.0271	0.976
	0.0783	1.24
	0.0243	1.89
	0.0474	0.176
	0.0297	2.09
	0.0464	0.278
	0.0462	0.564
	0.0982	1.37
	0.064	0.4
	0.064	1.5
	0.1	1
	0.059	0.91
	0.1	2.3
	0.057	2.2
	0.1	0.1
	0.14	1.6
	0.32	2.9
	0.15	1.5
	0.088	0.86
	0.082	0.86
	0.13	1.8
	0.22	2
	0.094	0.92
	0.084	1.2
	0.093	2.7
	0.072	4.1
	0.037	2.7
	0.042	0.97
	0.061	1.4
	0.082	2
	0.061	1.5
	0.063	1.6
	0.1	1.9
	0.095	1.4
	0.068	1.1
	0.044	1.5
	0.083	4.3
	0.03	0.66
	0.083	3.7
	ND	0.72
	0.097	0.44
	0.097	0.4
	0.11	0.56
	0.19	2.4
	0.14	1
	0.15	3.8
	0.11	1.2
	0.2	2.3
	0.054	1.3
	0.1	2.8
	0.039	1.3
	0.034	0.57
	0.078	1.5
	0.06	0.78
	0.086	1.2
	0.075	2.1
	0.21	2.1
	0.48	0.84
	0.48	0.61

Reviewer/Permit Engineer: Derek Garner

Facility: Wise Foods, Inc.
NPDES #: PA0007498
Outfall No: 001
n (Samples/Month): 4

Parameter	Distribution Applied	Coefficient of Variation (daily)	Avg. Monthly
Total Copper (mg/L)	Delta-Lognormal	0.7983999	0.2235238
Total Iron (mg/L)	Lognormal	0.8404550	3.7212025

Discharge Information

Instructions | Discharge | Stream

Facility: **Wise Foods, Inc.** NPDES Permit No.: **PA0007498** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Industrial Waste**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.2357	229	7	0.071					

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		458		132							
	Chloride (PWS)	mg/L		81.4		24.536							
	Bromide	mg/L	<	0.093		17.322							
	Sulfate (PWS)	mg/L		42.7									
	Fluoride (PWS)	mg/L		0.085									
Group 2	Total Aluminum	µg/L		171		591							
	Total Antimony	µg/L	<	0.3									
	Total Arsenic	µg/L	<	0.44									
	Total Barium	µg/L		56.8									
	Total Beryllium	µg/L	<	0.1									
	Total Boron	µg/L		44.4									
	Total Cadmium	µg/L		0.23									
	Total Chromium (III)	µg/L		2									
	Hexavalent Chromium	µg/L		0.0854									
	Total Cobalt	µg/L	<	0.81									
	Total Copper	µg/L		22.3		2.19	0.798						
	Free Cyanide	µg/L											
	Total Cyanide	µg/L		15									
	Dissolved Iron	µg/L		214									
	Total Iron	µg/L		3721		1010	0.84						
	Total Lead	µg/L		1.1		0.633							
	Total Manganese	µg/L		40.2		120.5							
	Total Mercury	µg/L	<	0.4									
	Total Nickel	µg/L		1.8		7							
	Total Phenols (Phenolics) (PWS)	µg/L	<	16									
	Total Selenium	µg/L	<	1									
	Total Silver	µg/L	<	0.53									
	Total Thallium	µg/L	<	0.081									
	Total Zinc	µg/L		64		20.334							
	Total Molybdenum	µg/L	<	0.34									
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

Group 3	Carbon Tetrachloride	µg/L	<										
	Chlorobenzene	µg/L											
	Chlorodibromomethane	µg/L	<										
	Chloroethane	µg/L	<										
	2-Chloroethyl Vinyl Ether	µg/L	<										
	Chloroform	µg/L	<										
	Dichlorobromomethane	µg/L	<										
	1,1-Dichloroethane	µg/L	<										
	1,2-Dichloroethane	µg/L	<										
	1,1-Dichloroethylene	µg/L	<										
	1,2-Dichloropropane	µg/L	<										
	1,3-Dichloropropylene	µg/L	<										
	1,4-Dioxane	µg/L	<										
	Ethylbenzene	µg/L	<										
	Methyl Bromide	µg/L	<										
	Methyl Chloride	µg/L	<										
	Methylene Chloride	µg/L	<										
	1,1,2,2-Tetrachloroethane	µg/L	<										
	Tetrachloroethylene	µg/L	<										
	Toluene	µg/L	<										
	1,2-trans-Dichloroethylene	µg/L	<										
	1,1,1-Trichloroethane	µg/L	<										
	1,1,2-Trichloroethane	µg/L	<										
	Trichloroethylene	µg/L	<										
	Vinyl Chloride	µg/L	<										
Group 4	2-Chlorophenol	µg/L	<										
	2,4-Dichlorophenol	µg/L	<										
	2,4-Dimethylphenol	µg/L	<										
	4,6-Dinitro-o-Cresol	µg/L	<										
	2,4-Dinitrophenol	µg/L	<										
	2-Nitrophenol	µg/L	<										
	4-Nitrophenol	µg/L	<										
	p-Chloro-m-Cresol	µg/L	<										
	Pentachlorophenol	µg/L	<										
	Phenol	µg/L	<										
	2,4,6-Trichlorophenol	µg/L	<										
Group 5	Acenaphthene	µg/L	<										
	Acenaphthylene	µg/L	<										
	Anthracene	µg/L	<										
	Benzidine	µg/L	<										
	Benzo(a)Anthracene	µg/L	<										
	Benzo(a)Pyrene	µg/L	<										
	3,4-Benzofluoranthene	µg/L	<										
	Benzo(ghi)Perylene	µg/L	<										
	Benzo(k)Fluoranthene	µg/L	<										
	Bis(2-Chloroethoxy)Methane	µg/L	<										
	Bis(2-Chloroethyl)Ether	µg/L	<										
	Bis(2-Chloroisopropyl)Ether	µg/L	<										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<										
	4-Bromophenyl Phenyl Ether	µg/L	<										
	Butyl Benzyl Phthalate	µg/L	<										
	2-Chloronaphthalene	µg/L	<										
	4-Chlorophenyl Phenyl Ether	µg/L	<										
	Chrysene	µg/L	<										
	Dibenzo(a,h)Anthrancene	µg/L	<										
	1,2-Dichlorobenzene	µg/L	<										
	1,3-Dichlorobenzene	µg/L	<										
	1,4-Dichlorobenzene	µg/L	<										
	3,3-Dichlorobenzidine	µg/L	<										
	Diethyl Phthalate	µg/L	<										
	Dimethyl Phthalate	µg/L	<										
	Di-n-Butyl Phthalate	µg/L	<										
	2,4-Dinitrotoluene	µg/L	<										

	2,6-Dinitrotoluene	µg/L	<										
	Di-n-Octyl Phthalate	µg/L	<										
	1,2-Diphenylhydrazine	µg/L	<										
	Fluoranthene	µg/L	<										
	Fluorene	µg/L	<										
	Hexachlorobenzene	µg/L	<										
	Hexachlorobutadiene	µg/L	<										
	Hexachlorocyclopentadiene	µg/L	<										
	Hexachloroethane	µg/L	<										
	Indeno(1,2,3-cd)Pyrene	µg/L	<										
	Isophorone	µg/L	<										
	Naphthalene	µg/L	<										
	Nitrobenzene	µg/L	<										
	n-Nitrosodimethylamine	µg/L	<										
	n-Nitrosodi-n-Propylamine	µg/L	<										
	n-Nitrosodiphenylamine	µg/L	<										
	Phenanthrene	µg/L	<										
	Pyrene	µg/L	<										
	1,2,4-Trichlorobenzene	µg/L	<										
Group 6	Aldrin	µg/L	<	0.03									
	alpha-BHC	µg/L	<	0.01									
	beta-BHC	µg/L	<	0.02									
	gamma-BHC	µg/L	<	0.02									
	delta BHC	µg/L	<	0.02									
	Chlordane	µg/L	<	0.2									
	4,4-DDT	µg/L	<	0.06									
	4,4-DDE	µg/L	<	0.01									
	4,4-DDD	µg/L	<	0.01									
	Dieldrin	µg/L	<	0.0033									
	alpha-Endosulfan	µg/L	<	0.01									
	beta-Endosulfan	µg/L	<	0.02									
	Endosulfan Sulfate	µg/L	<	0.01									
	Endrin	µg/L	<	0.04									
	Endrin Aldehyde	µg/L	<	0.02									
	Heptachlor	µg/L	<	0.01									
	Heptachlor Epoxide	µg/L	<	0.004									
	PCB-1016	µg/L	<	0.2									
	PCB-1221	µg/L	<	0.19									
	PCB-1232	µg/L	<	0.19									
	PCB-1242	µg/L	<	0.22									
	PCB-1248	µg/L	<	0.08									
	PCB-1254	µg/L	<	0.27									
	PCB-1260	µg/L	<	0.15									
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<	0.19									
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

Stream / Surface Water Information

Wise Foods, Inc., NPDES Permit No. PA0007498, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Susquehanna River**

No. Reaches to Model: **1**

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	006685	160.13	473	10500			Yes
End of Reach 1	006685	157.92	470	10533			Yes

Q *7-10*

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	160.13	0.105										69	7		
End of Reach 1	157.92	0.105										69	7		

Q *h*

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	160.13														
End of Reach 1	157.92														

Model Results

Wise Foods, Inc., NPDES Permit No. PA0007498, Outfall 001

Instructions | *Results* | RETURN TO INPUTS | SAVE AS PDF | PRINT | (●) All ( ) Inputs ( ) Results ( ) Limits

☑ ***Hydrodynamics***

Q_{7-10}

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
160.13	1102.50		1102.50	0.365	0.00026	1.116	768.819	688.692	1.285	0.105	42809.762
157.92	1105.97		1105.965								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
160.13	3388.66		3388.66	0.365	0.00026	1.829	768.819	420.245	2.41	0.056	20415.128
157.92	3397.964		3397.96								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.071 Analysis Hardness (mg/l): 69.742 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	132000	0		0	N/A	N/A	N/A	
Chloride (PWS)	24536.1	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	591	0		0	750	750	34,884	
Total Antimony	0	0		0	1,100	1,100	237,246	
Total Arsenic	0	0		0	340	340	73,330	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	4,529,233	
Total Boron	0	0		0	8,100	8,100	1,746,990	
Total Cadmium	0	0		0	1.418	1.48	319	Chem Translator of 0.959 applied
Total Chromium (III)	0	0		0	424.146	1,342	289,490	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	3,514	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	20,489	
Total Copper	2.19	0		0	9.570	9.97	1,680	Chem Translator of 0.96 applied

Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	1010	0		0	N/A	N/A	N/A	
Total Lead	0.633	0		0	43.530	51.6	10,994	Chem Translator of 0.844 applied
Total Manganese	120.5	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	355	Chem Translator of 0.85 applied
Total Nickel	7	0		0	345.191	346	73,097	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	1.731	2.04	439	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	14,019	
Total Zinc	20.334	0		0	86.347	88.3	14,677	Chem Translator of 0.978 applied
Aldrin	0	0		0	3	3.0	647	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	0.95	0.95	205	
Chlordane	0	0		0	2.4	2.4	518	
4,4-DDT	0	0		0	1.1	1.1	237	
4,4-DDE	0	0		0	1.1	1.1	237	
4,4-DDD	0	0		0	1.1	1.1	237	
Dieldrin	0	0		0	0.24	0.24	51.8	
alpha-Endosulfan	0	0		0	0.22	0.22	47.4	
beta-Endosulfan	0	0		0	0.22	0.22	47.4	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	0.086	0.086	18.5	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.52	0.52	112	
Heptachlor Epoxide	0	0		0	0.5	0.5	108	
Toxaphene	0	0		0	0.73	0.73	157	

☑ ***CFC*** CCT (min): 720 PMF: 0.130 Analysis Hardness (mg/l): 69.407 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	132000	0		0	N/A	N/A	N/A	
Chloride (PWS)	24536.1	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	591	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	86,487	
Total Arsenic	0	0		0	150	150	58,969	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	1,611,809	
Total Boron	0	0		0	1,600	1,600	628,999	
Total Cadmium	0	0		0	0.191	0.21	81.2	Chem Translator of 0.924 applied
Total Chromium (III)	0	0		0	54.956	63.9	25,121	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	4,087	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	7,469	
Total Copper	2.19	0		0	6.555	6.83	1,826	Chem Translator of 0.96 applied

Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	1010	0		0	1,500	1,500	1,483,079	WQC = 30 day average; PMF = 1
Total Lead	0.633	0		0	1.687	2.0	538	Chem Translator of 0.844 applied
Total Manganese	120.5	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	356	Chem Translator of 0.85 applied
Total Nickel	7	0		0	38.184	38.3	12,311	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	1,961	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	5,111	
Total Zinc	20.334	0		0	86.699	87.9	26,594	Chem Translator of 0.986 applied
Aldrin	0	0		0	0.1	0.1	39.3	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	N/A	N/A	N/A	
Chlordane	0	0		0	0.0043	0.004	1.69	
4,4-DDT	0	0		0	0.001	0.001	0.39	
4,4-DDE	0	0		0	0.001	0.001	0.39	
4,4-DDD	0	0		0	0.001	0.001	0.39	
Dieldrin	0	0		0	0.056	0.056	22.0	
alpha-Endosulfan	0	0		0	0.056	0.056	22.0	
beta-Endosulfan	0	0		0	0.056	0.056	22.0	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	0.036	0.036	14.2	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.0038	0.004	1.49	
Heptachlor Epoxide	0	0		0	0.0038	0.004	1.49	
Toxaphene	0	0		0	0.0002	0.0002	0.079	

☑ ***THH*** CCT (min): 720 PMF: 0.130 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	132000	0		0	500,000	500,000	N/A	
Chloride (PWS)	24536.1	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	591	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	2,201	
Total Arsenic	0	0		0	10	10.0	3,931	
Total Barium	0	0		0	2,400	2,400	943,498	
Total Boron	0	0		0	3,100	3,100	1,218,685	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	

Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	2.19	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	117,937	
Total Iron	1010	0		0	N/A	N/A	N/A	
Total Lead	0.633	0		0	N/A	N/A	N/A	
Total Manganese	120.5	0		0	1,000	1,000	345,873	
Total Mercury	0	0		0	0.050	0.05	19.7	
Total Nickel	7	0		0	610	610	237,061	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	94.3	
Total Zinc	20.334	0		0	N/A	N/A	N/A	
Aldrin	0	0		0	N/A	N/A	N/A	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	4.2	4.2	1,651	
Chlordane	0	0		0	N/A	N/A	N/A	
4,4-DDT	0	0		0	N/A	N/A	N/A	
4,4-DDE	0	0		0	N/A	N/A	N/A	
4,4-DDD	0	0		0	N/A	N/A	N/A	
Dieldrin	0	0		0	N/A	N/A	N/A	
alpha-Endosulfan	0	0		0	20	20.0	7,862	
beta-Endosulfan	0	0		0	20	20.0	7,862	
Endosulfan Sulfate	0	0		0	20	20.0	7,862	
Endrin	0	0		0	0.03	0.03	11.8	
Endrin Aldehyde	0	0		0	1	1.0	393	
Heptachlor	0	0		0	N/A	N/A	N/A	
Heptachlor Epoxide	0	0		0	N/A	N/A	N/A	
Toxaphene	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 720 PMF: 0.188 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	132000	0		0	N/A	N/A	N/A	
Chloride (PWS)	24536.1	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	591	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	

Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	2.19	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	1010	0		0	N/A	N/A	N/A	
Total Lead	0.633	0		0	N/A	N/A	N/A	
Total Manganese	120.5	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	7	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	20.334	0		0	N/A	N/A	N/A	
Aldrin	0	0		0	0.0000008	8.00E-07	0.001	
alpha-BHC	0	0		0	0.0004	0.0004	0.7	
beta-BHC	0	0		0	0.008	0.008	14.0	
gamma-BHC	0	0		0	N/A	N/A	N/A	
Chlordane	0	0		0	0.0003	0.0003	0.52	
4,4-DDT	0	0		0	0.00003	0.00003	0.052	
4,4-DDE	0	0		0	0.00002	0.00002	0.035	
4,4-DDD	0	0		0	0.0001	0.0001	0.17	
Dieldrin	0	0		0	0.000001	0.000001	0.002	
alpha-Endosulfan	0	0		0	N/A	N/A	N/A	
beta-Endosulfan	0	0		0	N/A	N/A	N/A	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	N/A	N/A	N/A	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.000006	0.000006	0.01	
Heptachlor Epoxide	0	0		0	0.00003	0.00003	0.052	
Toxaphene	0	0		0	0.0007	0.0007	1.22	

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
4,4-DDT	0.0001	0.0002	0.052	0.082	0.13	µg/L	0.052	CRL	Discharge Conc ≥ 50% WQBEL (RP)

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	22,359	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	943,498	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	628,999	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	81.2	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	25,121	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	2,252	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	7,469	µg/L	Discharge Conc < TQL
Total Copper	1,421	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	117,937	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	1,483,079	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	538	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	345,873	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	19.7	µg/L	Discharge Conc ≤ 10% WQBEL
Total Nickel	12,311	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	1,961	µg/L	Discharge Conc < TQL
Total Silver	281	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	94.3	µg/L	Discharge Conc < TQL
Total Zinc	9,407	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Aldrin	0.001	µg/L	Discharge Conc < TQL
alpha-BHC	0.7	µg/L	Discharge Conc < TQL
beta-BHC	14.0	µg/L	Discharge Conc < TQL
gamma-BHC	131	µg/L	Discharge Conc < TQL
delta BHC	N/A	N/A	No WQS
Chlordane	0.52	µg/L	Discharge Conc < TQL
4,4-DDE	0.035	µg/L	Discharge Conc < TQL
4,4-DDD	0.17	µg/L	Discharge Conc < TQL
Dieldrin	0.002	µg/L	Discharge Conc < TQL
alpha-Endosulfan	22.0	µg/L	Discharge Conc < TQL
beta-Endosulfan	22.0	µg/L	Discharge Conc < TQL

Endosulfan Sulfate	7,862	µg/L	Discharge Conc < TQL
Endrin	11.8	µg/L	Discharge Conc < TQL
Endrin Aldehyde	393	µg/L	Discharge Conc < TQL
Heptachlor	0.01	µg/L	Discharge Conc < TQL
Heptachlor Epoxide	0.052	µg/L	Discharge Conc < TQL
PCB-1016	N/A	N/A	No WQS
PCB-1221	N/A	N/A	No WQS
PCB-1232	N/A	N/A	No WQS
PCB-1242	N/A	N/A	No WQS
PCB-1248	N/A	N/A	No WQS
PCB-1254	N/A	N/A	No WQS
PCB-1260	N/A	N/A	No WQS
Toxaphene	0.079	µg/L	Discharge Conc < TQL

Input Data WQM 7.0

Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
6685	SUSQUEHANNA RIVER	**160.130**	473.00	10500.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.105	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Wise Foods	PA0007498A1	0.2357	0.2357	0.2357	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	125.00	2.00	0.00	7.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	39.00	0.00	0.00	0.70

Input Data WQM 7.0

Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
6685	SUSQUEHANNA RIVER	**157.920**	470.00	10533.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.105	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
6685	SUSQUEHANNA RIVER	**138.060**	438.00	11200.00	0.00000	6.50	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.105	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07K	6685	SUSQUEHANNA RIVER

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (ºC)	Analysis pH
Q7-10 Flow												
160.130	1102.50	0.00	1102.50	.3646	0.00026	1.116	768.82	688.69	1.28	0.105	25.00	7.00
157.920	1105.96	0.00	1105.96	.3646	0.00031	1.113	765.55	688.04	1.30	0.934	25.00	7.00
Q1-10 Flow												
160.130	1069.43	0.00	1069.43	.3646	0.00026	NA	NA	NA	1.26	0.107	25.00	7.00
157.920	1072.79	0.00	1072.79	.3646	0.00031	NA	NA	NA	1.28	0.951	25.00	7.00
Q30-10 Flow												
160.130	1334.03	0.00	1334.03	.3646	0.00026	NA	NA	NA	1.43	0.094	25.00	7.00
157.920	1338.22	0.00	1338.22	.3646	0.00031	NA	NA	NA	1.45	0.840	25.00	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.97	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.21	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07K	6685	SUSQUEHANNA RIVER

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
160.130	Wise Foods	11.07	78	11.07	78	0	0
157.920		NA	NA	11.07	NA	NA	NA

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
160.130	Wise Foods	1.37	39	1.37	39	0	0
157.920		NA	NA	1.37	NA	NA	NA

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
160.13	Wise Foods	125	125	39	39	3	3	0	0
157.92		NA	NA	NA	NA	NA	NA	NA	NA

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07K	6685	SUSQUEHANNA RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (ºC)	Analysis pH
160.130	0.236	25.000	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
768.819	1.116	688.692	1.285
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.04	0.097	0.01	1.029
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.241	1.735	Tsivoglou	5
Reach Travel Time (days)			
0.105			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.011	2.04	0.01	7.54
0.021	2.04	0.01	7.54
0.032	2.03	0.01	7.54
0.042	2.03	0.01	7.54
0.053	2.03	0.01	7.54
0.063	2.03	0.01	7.54
0.074	2.02	0.01	7.54
0.084	2.02	0.01	7.54
0.095	2.02	0.01	7.54
0.105	2.01	0.01	7.54

RMI	Total Discharge Flow (mgd)	Analysis Temperature (ºC)	Analysis pH
157.920	0.236	25.000	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
765.547	1.113	688.036	1.299
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.01	0.006	0.01	1.029
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.541	2.082	Tsivoglou	5
Reach Travel Time (days)			
0.934			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.093	2.01	0.01	7.54
0.187	2.01	0.01	7.54
0.280	2.01	0.01	7.54
0.374	2.01	0.01	7.54
0.467	2.01	0.01	7.54
0.561	2.01	0.01	7.54
0.654	2.00	0.01	7.54
0.748	2.00	0.01	7.54
0.841	2.00	0.00	7.54
0.934	2.00	0.00	7.54

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07K	6685	SUSQUEHANNA RIVER

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
160.130	Wise Foods	PA0007498A1	0.236	CBOD5	125		
				NH3-N	39	78	
				Dissolved Oxygen			3